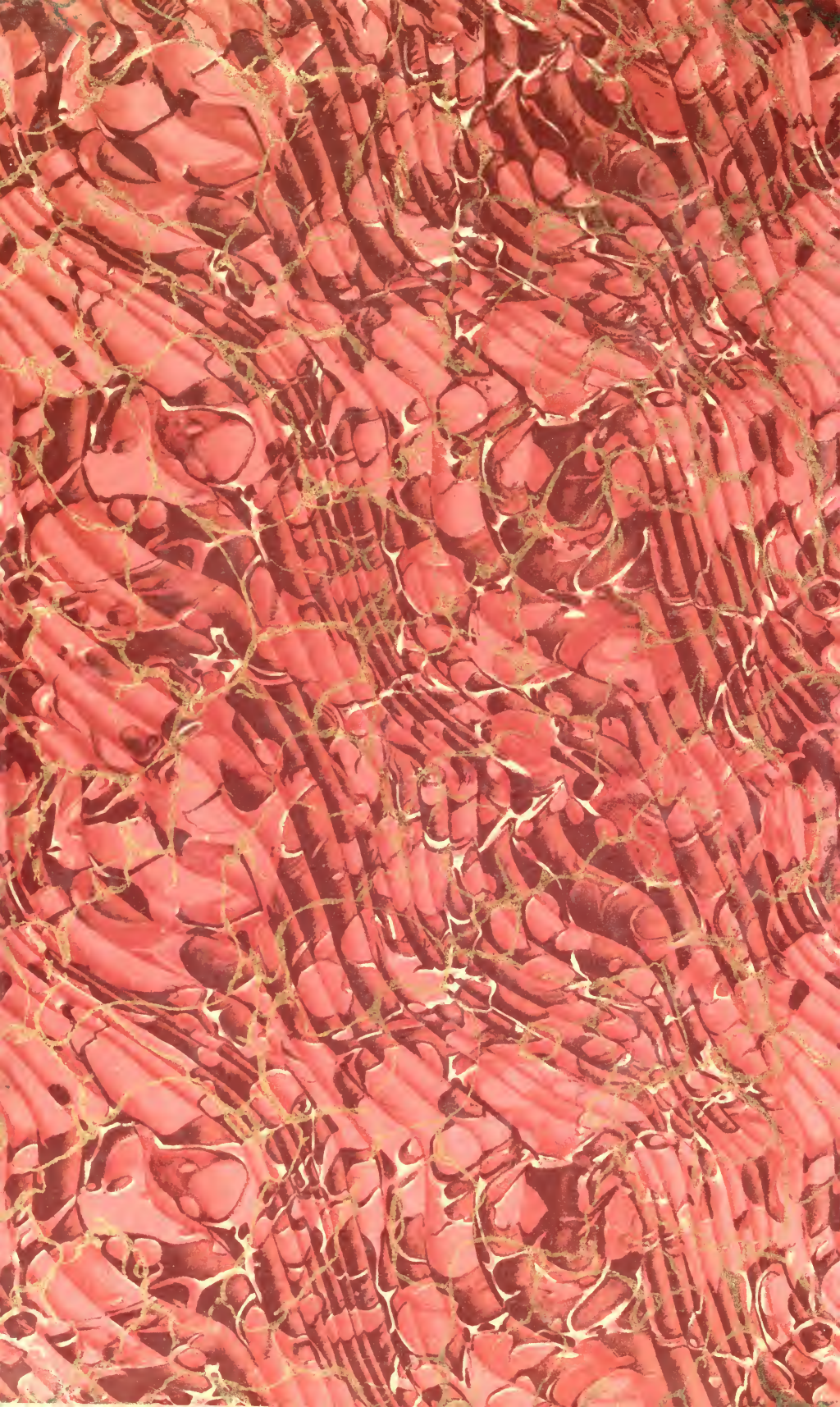
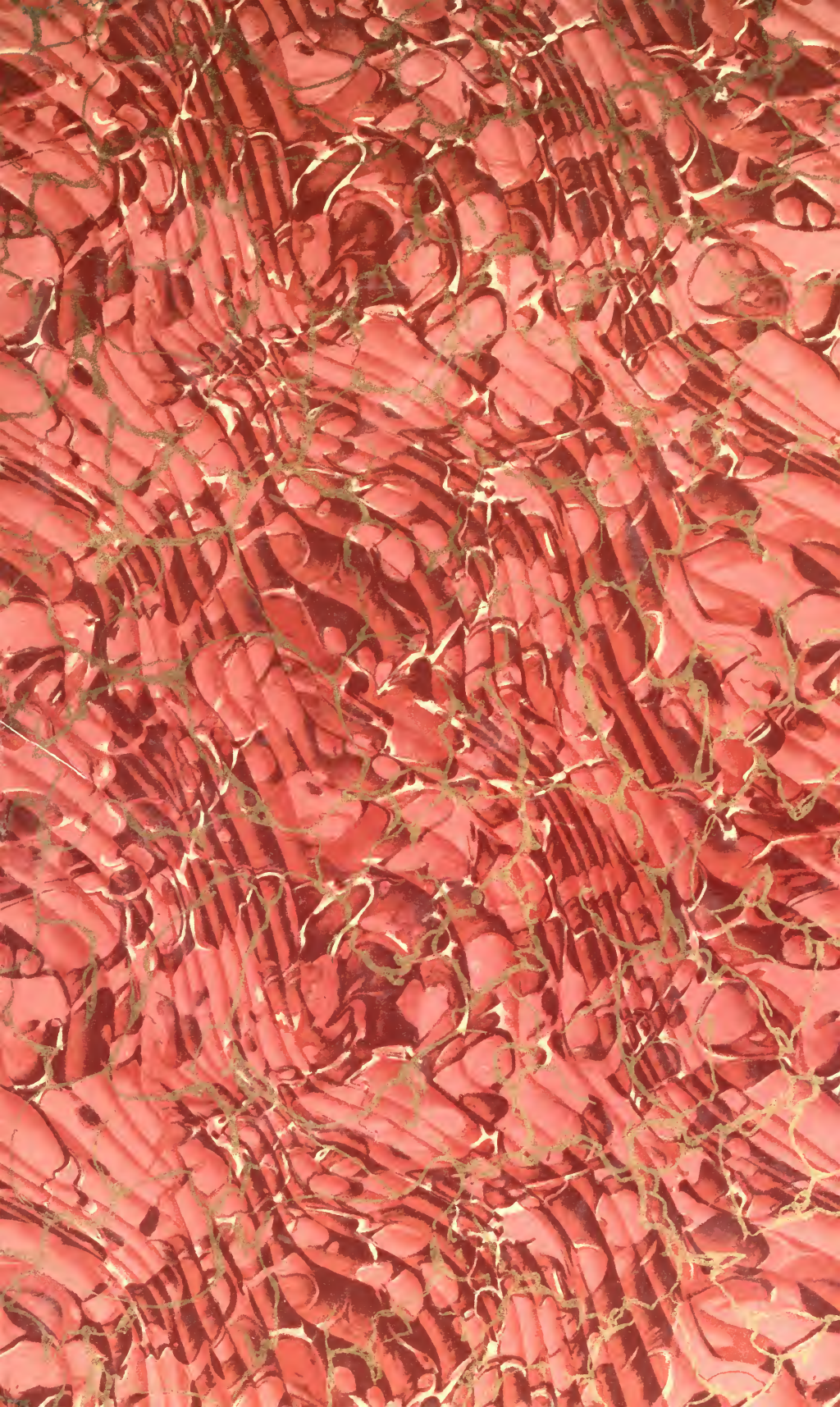


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I

Archæological Notes on Western Washington
and Adjacent British Columbia

BY
ALBERT B. REAGAN

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JULY 18, 1917

I.
ARCHÆOLOGICAL NOTES ON WESTERN WASH-
INGTON AND ADJACENT BRITISH COLUMBIA*

BY ALBERT B. REAGAN

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July 18, 1917

INTRODUCTION AND ACKNOWLEDGMENTS

The field work on which this paper is based was carried on as time would permit while the writer had charge of the Lummi Indians in 1905 and the Quillayute and Hoh Indians in 1905 to 1909.

Western Washington and adjacent British territory, as here considered, embrace the Olympic Peninsula, the shores and islands of Puget Sound and Georgian Bay and that part of British Columbia lying northward from the International Boundary Line to the Fraser valley and delta. In general it is a most difficult region in which to do research work of any kind; for away from the trails and roads the fallen timber, underbrush and ferns make the forest such a jungle in most places.

For convenience, the archæology of the region will be considered under three general headings, viz.: The Archæology of the Olympic Peninsula, The Archæology of the Lummi-Nooksack country, and The Archæological material in adjacent British territory.

In submitting this paper the writer wishes to thank Messrs. Barton W. Evermann and E. W. Gifford of the California Academy of Sciences, Harlen I. Smith of the Canadian Geological Survey, F. W. Hodge of the Bureau of American Ethnology and Charles W. Smith, Assistant Librarian of the University of Washington, for their kind aid in helping him with the bibliography. The archæological references given below were furnished by Mr. Charles W. Smith.

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ARCHÆOLOGY OF THE OLYMPIC PENINSULA

General Remarks.

As has been previously mentioned about the region in general, the Olympic peninsula is a very difficult country in which to do research work. There are but three wagon roads in the entire area west of the Olympics. One of these roads, aggregating some 50 miles in total length, connects Port Angeles with Lake Crescent and Port Crescent and the latter again

with Lake Crescent. The second road extends from East Clallam, on the Strait of Juan de Fuca, west to LaPush, on the Pacific front, a distance of about 50 miles. The third road connects the above roads along the line of the Soleduck River.

Trails also extend from West Clallam to Ozette Lake and the Dicky Lake country, and from the latter to Quillayute Prairie. Another trail connects Forks with the Hoh country. A few short trails also branch off of the main trails here and there. These afford all the means of gaining access to the interior, except by canoe on the various streams.

This peninsula covers an area of about 8000 square miles, or an area about the size of Connecticut, Rhode Island and Delaware combined. It extends approximately 100 miles in a north and south direction and 80 miles in an east and west line. It is triangular in shape with its hypotenuse side facing the Pacific. It is bounded on the north by the Strait of Juan de Fuca, on the east by Puget Sound, on the south by Chehalis River and Gray's Harbor, and on the west by the Pacific Ocean. Cape Flattery is at the northwest corner and Port Townsend at the northeast, and the snow-capped Olympics occupy the central area. The region consists generally of a benched area along the coast from which the foothills gradually ascend toward Mount Olympus, 8150 feet in height, and watershed between the Strait of Fuca and the Pacific, a high ridge which extends from the central mountain area to Cape Flattery. Port Townsend, Port Angeles, Neah Bay, and Cape Flattery on the strait, and Quillayute (LaPush) and Gray's Harbor on the Pacific, are its most commonly heard of places.

The region was first discovered by the Spaniards. In 1775 Bruno Heceta, a Spanish captain, landed on the coast a little south of the mouth of the Hoh River, planted the cross and took formal possession of the country for Spain. Then at the foot of the cross he had thus set up he buried a bottle sealed with wax, in which was the written record of his work and the statement that he took possession of the land for Spain. While he was thus in the official act of taking possession of the country, the Indians visited his ship, the "Sonora," under the lee of Destruction Island, in charge of Heceta's companion, Bodega Y Quadra. The Indians came

in their canoes, held up bits of copper and iron, and with friendly signs sought to trade for more of the metals precious to them. Believing that everything was well, Quadra sent seven men ashore to trade with the Indians for wood and water. No sooner had they landed than 300 Indians rushed from ambush, killed the sailors, and tore the boat to pieces for the metal fastenings. Quadra was furious and wished to land 30 men to obtain revenge, but Heceta overruled him and sailed away, naming the island "Isla de Dolores," Isle of Sorrows. Later, in July, 1787, Captain Barclay, an English explorer, had a similar experience with these same Indians, in which he lost six men. He named the river of Hoh "Destruction River" as a result of this encounter, but late geographers have restored the Indian name "Hoh" to the river, but retain the name "Destruction" for the island that Quadra named "Isla de Dolores."

On August 1, 1790, Alferez Quimper, having been sent to explore the Strait of Juan de Fuca by the Spanish Captain Elisa, discovered Neah Bay and Bahada Point, two miles farther east. The former he named Bahia de Nuñez Gaona. At about the same time the Spanish Captain Don Francisco Elisa discovered Port Angeles. He had been tossed about for many weary days by storms and furious waves when suddenly he came upon a long, snake-like spit extending far out into the strait, curving so as to protect a large bay on its western side. In this bay he took refuge; and in consequence of the safe and perfect harbor thus formed, he named it Port Angeles—"The Port of the Angels." In May, 1792, Lieut. Salvador Fidalgo established a military post at Neah Bay, with necessary buildings and fortifications, and remained there until September. The bricks of the old fort—bricks imported from Mexico on the "Princessa," can be found in the earth banks there to-day. Here the Spaniards came in contact with the British, under Vancouver. A conference was called, and Quadra failed to agree with the latter. Then the two commissioners agreed to send to their home governments for further instructions, as a result of which the Spaniards were compelled to abandon the country.

While Vancouver was maneuvering with Quadra for the possession of the North Pacific, our own Captain Gray was

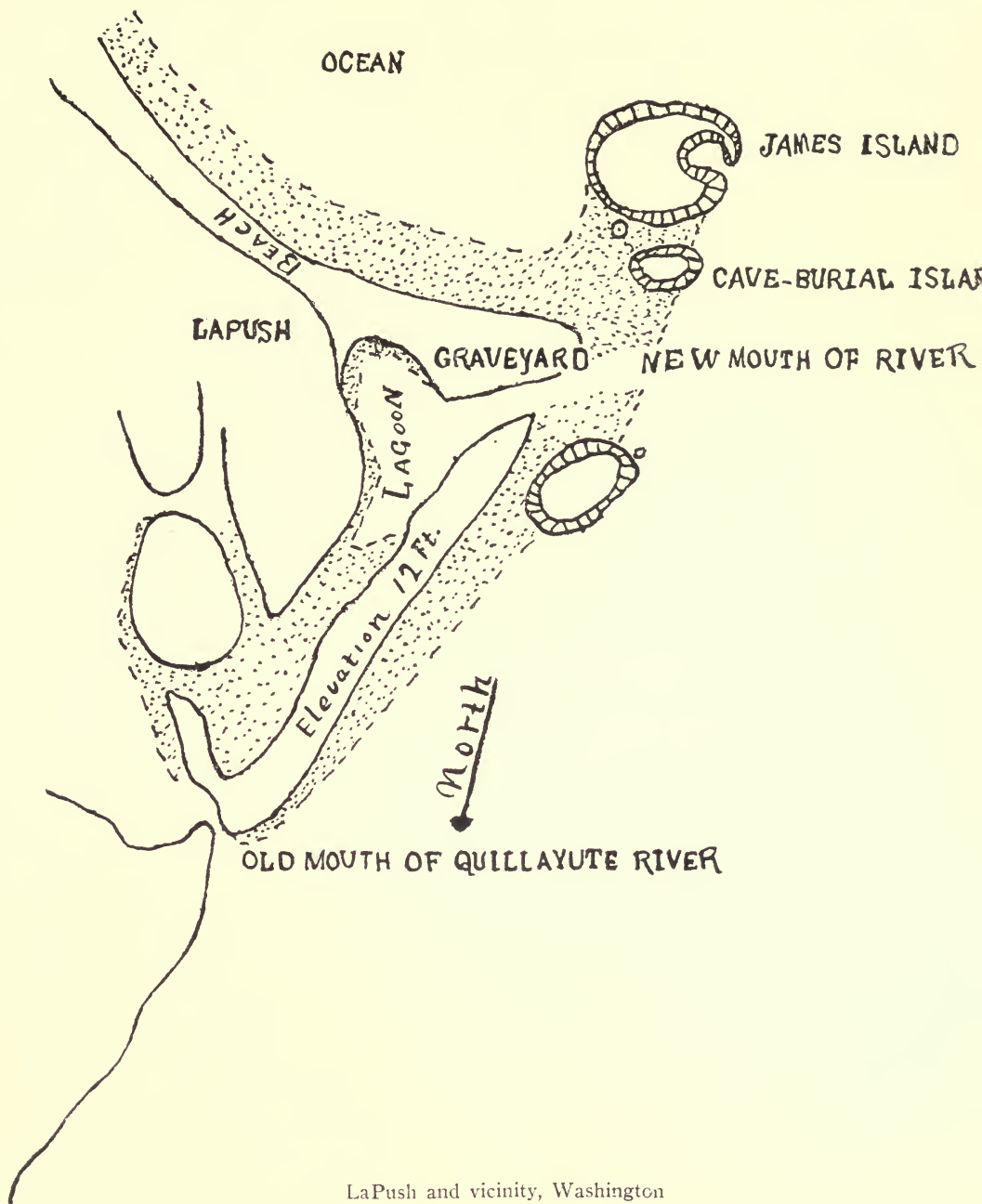
making his famous trip up the coast, staying the winter of 1791-'92 at the harbor that bears his name. As a result of this trip, and that of Lewis and Clark to the Columbia later, the country was jointly occupied by the British and the United States till the treaty of 1846 gave the Oregon territory to the United States. And later, in 1855-'59, Governor Stevens's treaties settled the Indian troubles.

The explorers found a tribe of short, heavy set Indians occupying the valley of each stream that flowed out into the ocean or strait; the village of the tribe being at the mouth of the respective stream. In addition, the Makahs occupied the Cape Flattery section of the peninsula and the Chemakums the Port Townsend division. These lived principally by fishing, though they also hunted. They represented different linguistic stocks and were continually at war with each other. The wars were carried on principally for the purpose of capturing slaves. Besides the slaves, who were almost always cruelly treated, the people of each tribe were divided into chieftain stock and the base people. The former owned the land and received the greater part of the benefits of the hunting expeditions and of the fish and whale catches. In fact the base people were considered only a little better than slaves.

The peninsula divides itself into several archæological fields, namely: The Quillayute region, the Hoh region, the Ozette-Makah region, and the Strait of Fuca and Sound region. The archæology of each of these divisions will be considered in the order given.

THE QUILLAYUTE REGION

The Quillayute region centers about the Indian village of LaPush, Washington, at the mouth of Quillayute River on the western coast of the Olympic peninsula some 36 miles down the coast from Cape Flattery at the entrance of the Strait of Juan de Fuca. It includes the territory drained by Quillayute River and its tributaries and also extends up and down the coast for several miles on each side of the Indian village. The archæological remains found in this region are middens, burial mounds, a cave-burial place near James Island, and over-mounds.



LaPush and vicinity, Washington

The middens are of three classes, based upon age: ancient, old, and recent.

The recent middens were made since the Astoria-Hudson Bay fur trading began, as is attested by the Hudson Bay Company's beads being intermingled with the middens. These middens were observed on James Island (the ancient home of the Quillayute Indians just off the shore from the present village), on both the Lagoon and Pacific water fronts at LaPush, and on and flanking Pacific Street ridge in the village itself. In all, they veneer an area of about 20 acres, some places detected only by the scattered "blue beads". The middens themselves are like those which will be described later, except they are less thick and are practically undecayed.

The middens here designated "old", underlie the recent at LaPush and on James Island; scattered patches also occur at several other places. Their greatest thickness, however, is to be found on James Island, where the Quillayutes were making their last stand against the Makahs to the northwest when the white man came on the scene. But how much of the middens on this island are "old", how much recent, and how much ancient, can not now be determined. The area which they cover has been used as a garden for many years; and, consequently, they have been much disturbed. Their original thickness of five to 15 feet, however, indicates that they were many years in accumulating. The midden material is here much decayed, but to a less degree than that of the next series described below.

The ancient middens underlie and are found to be intermixed with the more recent middens on James Island. They are also found on the Pacific water-front, also flanking and capping Pacific Street ridge at LaPush. A large patch of them also occurs near Jackson Creek about six miles south of the present village, and another, beyond the "point" on the coast about two miles northwest of the mouth of Quillayute River. Combined, they cover many acres in extent, but their original areas can not now be determined. The encroaching ocean has now removed practically the whole area on the Pacific front at LaPush; it removed a space along the whole village front 200 feet wide from 1904 to 1907. It has re-

duced the Jackson Creek area to a small wedge-shaped piece of land, and each high tide carries more of it away. The area above the "Point" also breasts each high tide. Furthermore, Quillayute River in the ages gone by has removed the northwest end of Pacific Street ridge and since 1912 has returned in its course and is again undermining the north end of this ridge. These facts, together with the fact that the coast in this region is sinking, show conclusively that these midden-areas were much larger originally than now. Middens of this age are also found far inland, at Beaver Prairie, Forks Prairie, Quillayute Prairie, and at various camping places along the Quillayute River and its tributaries; more recent middens are also found at each of these places.

These ancient middens, as of the other classes previously mentioned, are composed of decaying remains of marine shells, intermingled with enormous quantities of ashes, calcined and fractured rocks and other refuse material, all showing evidence of extreme age. Their age is further attested by the fact that huge trees, hundreds of years old, are growing on them.

A list of the marine and other species found in these middens, together with drawings of similar sea species are to be found at the close of this section.

The relics found in the middens are few in number, and but few of them are of stone. In the valley of the Quillayute River and southward along the coast for many miles, there are no hard slates, schists, or volcanic rock of any sort; and only to the northward in the Makah lands are there even granite boulders in any great number. Consequently, the Quillayutes had no material of which to make stone implements, except the agates of the beach. These they made into arrow heads but in no great numbers. Arrowheads when found, have usually been of the rough paleolithic type. The finding of implements of jade-like rock and basaltic glass or thin slate is indicative of an attack made on the village by the tribes to the north, where these rocks are plentiful. The people of those old times had no earthen pottery; basketry was used plentifully, and cups, dishes, spoons, and plates were made of wood. Fish knives were usually made of clam or mussel shells; the adzes, axes, skinning knives, scrapers, and

chisels were made of elk horn. Few relics are found in these ancient middens for the reason that the wood, shells, and bones used in making implements and utensils were so perishable. Those found are mostly barbed and grooved bone spear and arrow points, bone skinning knives and scrapers, whale rib daggers, bone needles, and mussel shell knives.

The burial mounds, so far as the writer has been able to locate them, are few in number. In the old days and until quite recently, the Quillayutes "buried" their dead mostly in canoes suspended among the leafy branches of the alder trees that border the various streams. They also cremated the dead. Furthermore the encroaching sea might possibly have obliterated some ancient graveyard, as it is washing away the graveyard of last century there now. Consequently, the fewness of the burial mounds.

The mounds are composed of clay, rock, clay and sand mixed, or of boulders only. The mounds of each type are usually several feet in height and many feet in diameter. Some of them approach an ellipse in shape; others, the form of a parallelogram. The material of each mound seems to have been heaped up over the corpse, which seems to have been laid on the top of the ground. The boulder heaps often contain fragments of cedar which would make one think that a crib of cedar might have been made over the corpse and then over this the boulders were piled, in the same manner that the Apaches of Fort Apache, Arizona, bury their dead on the east bank of White River to-day. Ashes in some of them seem to be against this theory, unless the body was cremated before the covering-over was done. Some of the other mounds have only ashes in them, which seems to indicate that the body was cremated before interment. The remaining mounds have almost wholly decomposed bones, often only traces of bones, in them. Some of the mounds also have a layer of ashes a foot or so above the corpse. This would seem to indicate that the belongings of the deceased were burned on the grave after the corpse had been covered over with a layer of earth.

In all the various classes of mounds examined, no relics have been found. It therefore seems that they were made by

the same race of people that now occupy the region. On account of a lack of data, however, this is inconclusive.

Many "oven-mounds" are found. In outward appearance they resemble the burial mounds above described. Within, however, are the charred remains of fruits or sea species that have been over-baked. That these are oven mounds, there is no doubt, as the Quillayutes bake clams, wild fruits, and "la camas" (Kammas, *Scilla fraseri*) in the same sort of oven to this day. A pit is dug in which a fire is built. On the fuel cobbles are piled, which, when heated to a red heat, are covered over with wet leaves, brush, or grass. On this the fruit or sea species are piled and over all wet grass is spread to a thickness of, say, seven inches. Then over all clay, earth or sand is heaped. Just before completing the covering over with the earth, a quantity of water is poured on the cooking product and then when the covering is completed a small hole is left through the dirt layer for the escape of steam. The cooking process is then let have its course for about 24 hours, when all is removed, or a hole dug through the top of it, and the cooked product removed. The earth-mound is left and the shifting sand fills up the hole from which the baked articles have been taken. The mound is then complete.

The cave-burial place is in a niche on the east side of a little islet a few hundred feet north of James Island. In the long ago this cave was more extensive than now; the encroaching sea will soon obliterate it entirely. How large it was originally, of course, can not now be determined. In it, under and intermingled with several feet of loose rock and boulders, were the bones of the dead, which were now and then uncovered by the pounding waves. For many years every white man who has come along has carried away some of the bones. Whether any of them have been placed in some museum is unknown to the writer. It is not likely that any of the bones are now left, as the waves have been sweeping the entire cave at high tide since 1908. Besides the bones, this cave has yielded some stone implements: a stone adz, several arrow points and a stone pipe were dug out of the debris in 1907. The writer was told that it yielded a considerable quantity of these implements in the last 35 years.

On inquiring of the Indians about this cave, the old people say that it was in it that their people threw their enemies killed in making attacks upon James Island. Moreover, Doctor Klekabuck told the writer that it was in this cave that he and the other Quillayutes threw the Makahs, slain in an attack upon James Island some time in about the sixties of last century. That this cave was the burial place of slaughtered enemies there seems to be no doubt. The stone implements found are made from stone that is not found in the region and must have been brought there in implement form by the person with whom it was interred. Furthermore, one would conclude that the boulders and cobbles were hurled on the dead by the spiteful Quillayutes on their coming and going past the cave-entrance in the days following the unsuccessful raids.

As a concluding remark on the archæology of this section, it seems, from the evidence at hand, that the archæological remains were made by the same race that now occupies the region. This opinion is also strengthened by the fact that the Quillayutes have no tradition of having migrated from any other place. They firmly assert that they have always lived there. But the finding of complete skulls in the ancient middens and burial mounds would be conclusive.¹

¹Below are some Quillayute myths that might be of interest to the readers.

A Thunder-Bird Myth.

The Indians believe that in time of stormy weather a bird of monstrous size soars through the heavens and by the opening and shutting of his eyes it produces the lightning and by the flapping of its wings it produces the thunder and the mighty winds. This bird, they say, has its nest in a dark hole under the glacier at the foot of the Olympic glacial field and that its moving about in its home there produces the "thunder-noise" there.

Myth Concerning the Origin of Crescent Lake.

The Quillayute myth about the origin of Crescent Lake is as follows: "Once, in the valley which the lake now occupies, our people and the Clallams were having a big battle. For two days the people killed each other. Then Mount Stormking became enraged. You know the mountain that overlooks the north end of the lake from the east. Well, Mount Stormking got angry (all things on earth were living beings then) and he took a great piece of rock from his crest and hurled it down into the valley, killing all who were fighting and at the same time damming the stream with the great rock, so that it has been as it is now ever since, and no Indian has gone near the place since that day." (This myth causes the question to arise: Has there been volcanic activity in the region since the Indian occupation? Undoubtedly it was a volcanic region in Eocene times, but as yet evidence of later volcanic activity is wanting.)

The Thunder-Bird and the Myth About the Origin of Beaver Prairie, Clallam County, Washington. (Police Hobucket).

"The thunder-bird lives in the heavens. He produces the lightning by his rapid flight through the air, the 'big noise' by the flapping of his wings. He feeds on the whale. Once he got a big whale in his talons and carried him to Beaver Prairie and ate him there. The whale fought terribly hard before he was killed. So terrible was the fight that in the struggle the combatants killed all the timber in the vicinity and pulled up the trees by the roots. And no trees have ever grown on the site to this day."

The Thunder-Bird, the Unsuccessful Battle with the Mimlos-Whale, and the Origin of the Prairies of the Olympic Peninsula. (Police Luke Hobucket).

"At the time of the great flood, the thunder-bird, the representative of good, fought the *Mimlos*-whale, the representative of evil. The great battle lasted a long time. For a long time the battle seemed undecided. The powerful bird could not whip the beast in the water. Time and again it seized it in its talons and tried to fly with it to its nest in the mountains; but the powerful ocean monster would get away from it. Each time that it seized it there was a terrible battle, and the 'big noise' caused by the bird's flapping its wings (the thunder) shook the very mountains. The places where these fights occurred were stripped of their timber, the trees being torn out by their roots. A curse was brought upon them, and to this day no trees grow upon them. They are the prairies of the country. At last the whale escaped to the deep ocean, and the thunder-bird gave up the fight. That is why the *Mimlos*-whale or killer-whale still lives in the ocean to-day."

The Thunder-Bird and the Origin of the Glacial-Boulder-Train Across Beaver Prairie. (Police Luke Hobucket).

"A man was living at Wo-lot (Beaver Prairie). He was an elk hunter. He went off hunting very early one morning, but soon came back, saying that he had seen a very big bird sitting in a tree just a little way above the ground. The bird was the thunder-bird. The man took one feather from thunderer's wing. It was just as long as a canoe paddle. He bent the feather and put it in his quiver and brought it home with him. After he had shown the feather to the people, he said: 'I also saw a very, very big whale on the prairie. It had been carried there by the bird. The bird was resting because it had such a big load.'

"The man sent word to all the Quillayute people at the mouth of the river to come up and cut up the whale, because it was so large that the bird could not carry it further. All the beach and river Indians, three to six in each whaling canoe, came at once to the prairie to cut up the whale. On reaching there they found the huge whale lying dead in the lower part of the prairie, as had been reported. They immediately commenced measuring off the parts they wanted; one family took the saddle, another the head, and so on. By evening they had it all cut up. They piled up the block-like sections of blubber all over the ground. Night came on; and the clouds overhead became black. The thunder-bird had been robbed of his prey and now he was returning with vengeance in his wings. It commenced to lightning and shower a little, not so much at first. Then it hailed large hail, hail larger than your fist. The hail killed and mangled all the people on the prairie. The Indians had cooked and eaten whale meat that evening; and it was all right, it was good to eat. But after the storm both meat and blubber were turned to stone, as were the people also. And to-day, in great blocks of rocks, they form the ridge from one end of the prairie to the other. One may even see the ribs of the whale's carcass and its massive head."

An Indian Myth of How the Headlands and Promontories of the Washington Coast Were Formed. (Elon Mason).

"It was long ago, when people were animals and animals were people. Kwatte was then still living on earth. He had his house on the beach near here; but he got hardly anything to eat, for the wolves of the region prowled the coast, caught the salmon, ate all the berries, and devoured all the animals of the woods, and gulped down all the fish eggs that floated ashore. What was Kwatte to do? One day the chief of the wolves came along up the coast. He came to Kwatte's house. Kwatte pretended to be sick. The wolf came in. He made himself at home. Kwatte let him stay. That night he made his bed at Kwatte's house beside Kwatte's fire. Soon he was sound asleep. When he had been asleep for a considerable time he began to snore. He snored loud. This was Kwatte's opportunity. He would now get even with the wolves; and would also have some meat to eat. He got his knife, looked at it to see if it was good and sharp, then, finding it in good shape, he went to the mat on which the wolf was sleeping and severed his head with one blow. He then skinned the carcass and hung the skin up above the fireplace in his house to dry. Then he stored the meat safely under his bed. Then he went to sleep.

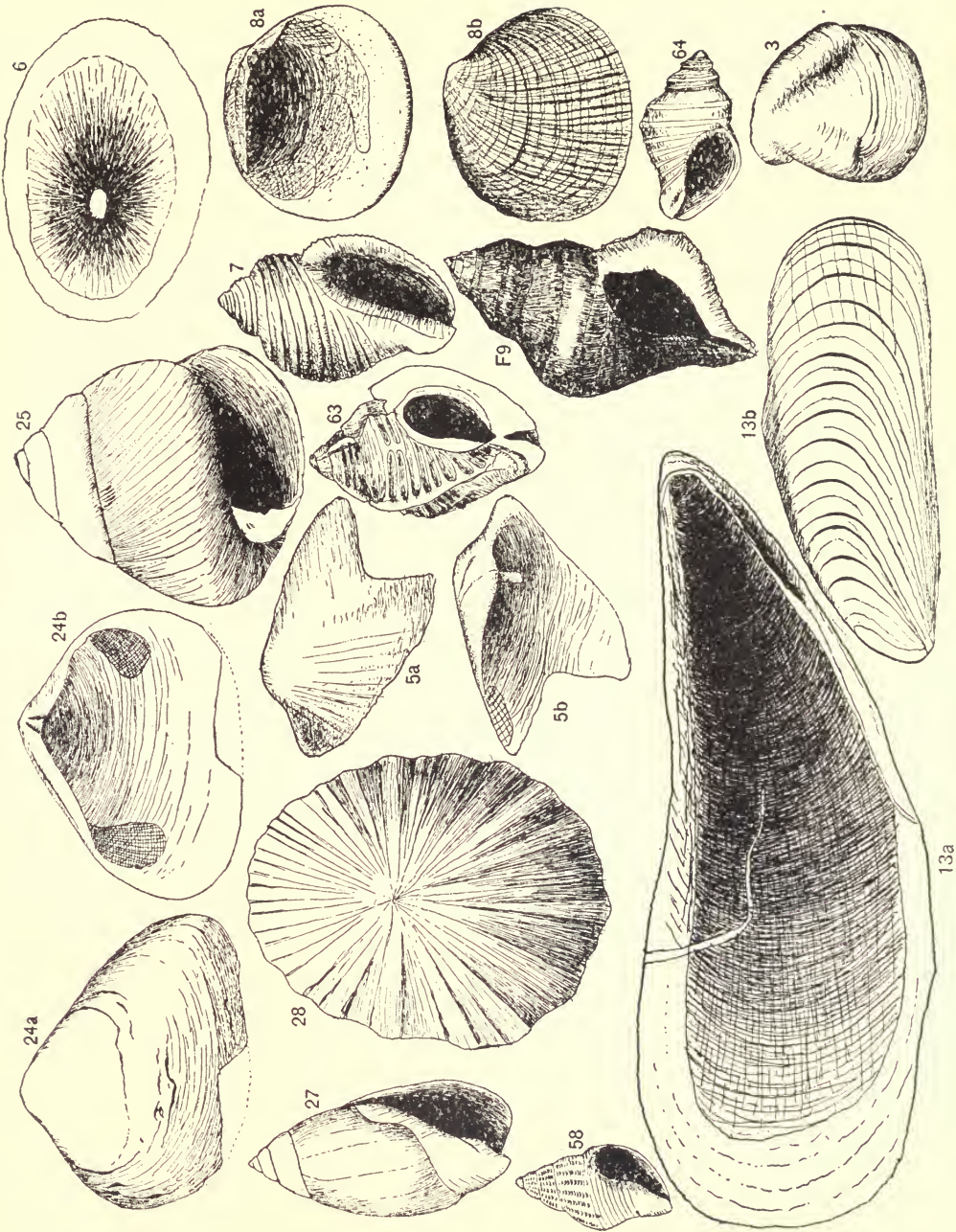
"The next morning, bright and early, a wolf came tracking his chief up the beach. He tracked him to Kwatte's house. He entered the house. Said he to Kwatte, 'Did you see Chief Wolf?' Kwatte answered, 'No; I am sick; I have not been out of my house; I have not seen him.' 'But he came into your house. We tracked him here,' exclaimed the wolf. While wolf and Kwatte were talking, the wolf's slave, the blue jay, had gone over to Kwatte's fire to warm himself. As he was spreading his hands out before the fire, a drop of something fell on the upper surface of one of his hands. At once he perceived that it was a kind of oil. He smelled it. At once he recognized it to have the same smell as the smell of his master. He said nothing, but went out of the room. The oil had dropped from the skin that was drying. As soon as he was out in the yard the blue jay told all the wolves what he had discovered; many wolves had now followed the track to Kwatte's house. The blue jay was crying, mourning the death of his master. The wolves all rushed into the house. Kwatte had anticipated trouble and had hung a basket of combs near the door. As the wolves entered, he made a quick move, seized the basket of combs, and before the wolves could lay hands on him he sallied forth out the door past them and into the woods near by and then down the beach. The whole pack of wolves now followed him in hot pursuit. Time and again they nearly overtook him. But as they were just in the act of seizing him he would take a comb out of the basket and drop it down on the beach

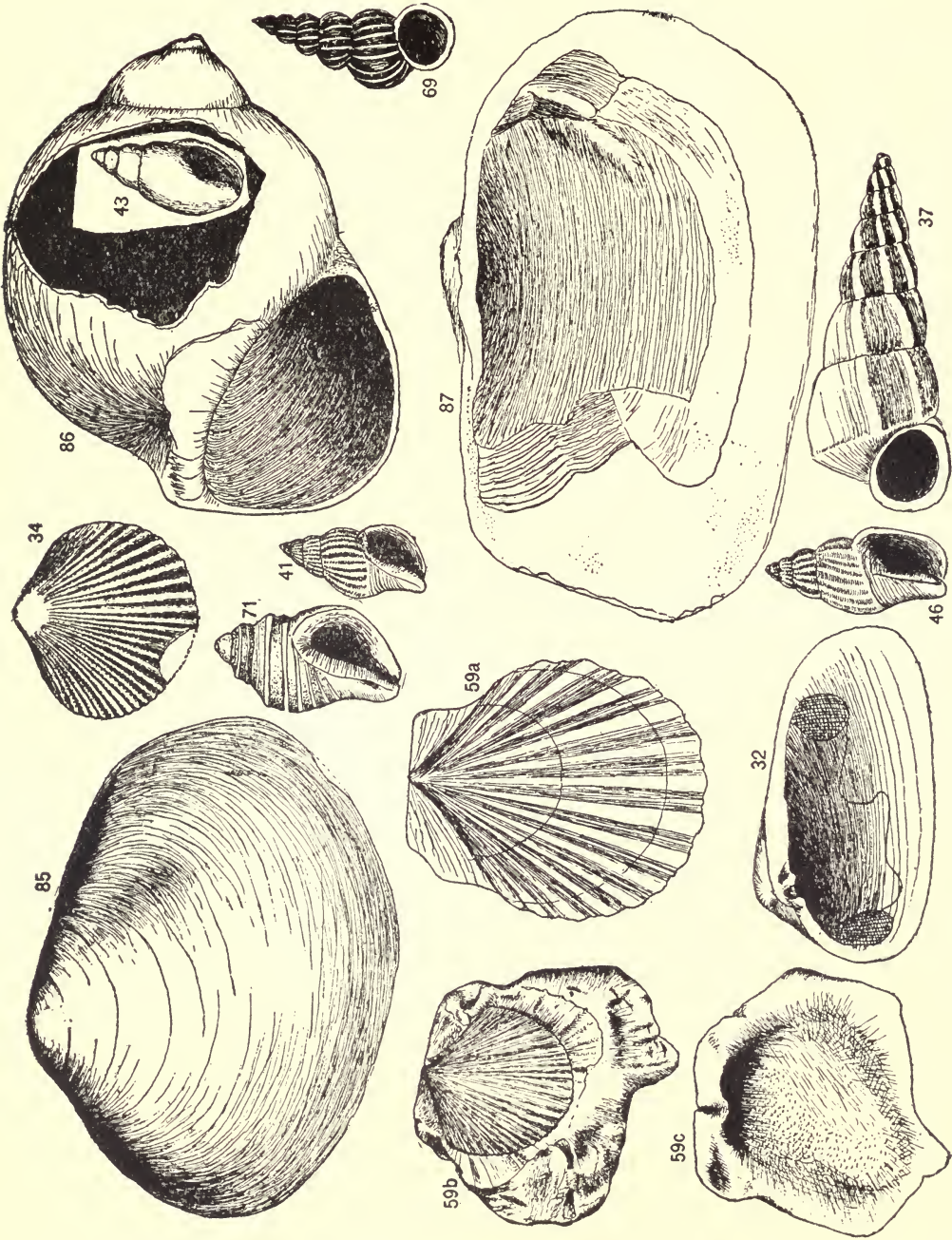
in front of them, edge up, thus forming a point of land projecting from the mainland across the beach into the surging waves. The wolves, of course, were compelled to climb over the promontories thus formed. Many of them they climbed over; but finally gave up the chase. But Kwatte kept on running till he had stood up all his combs on the beach. These combs are the headlands and promontories of the region now.

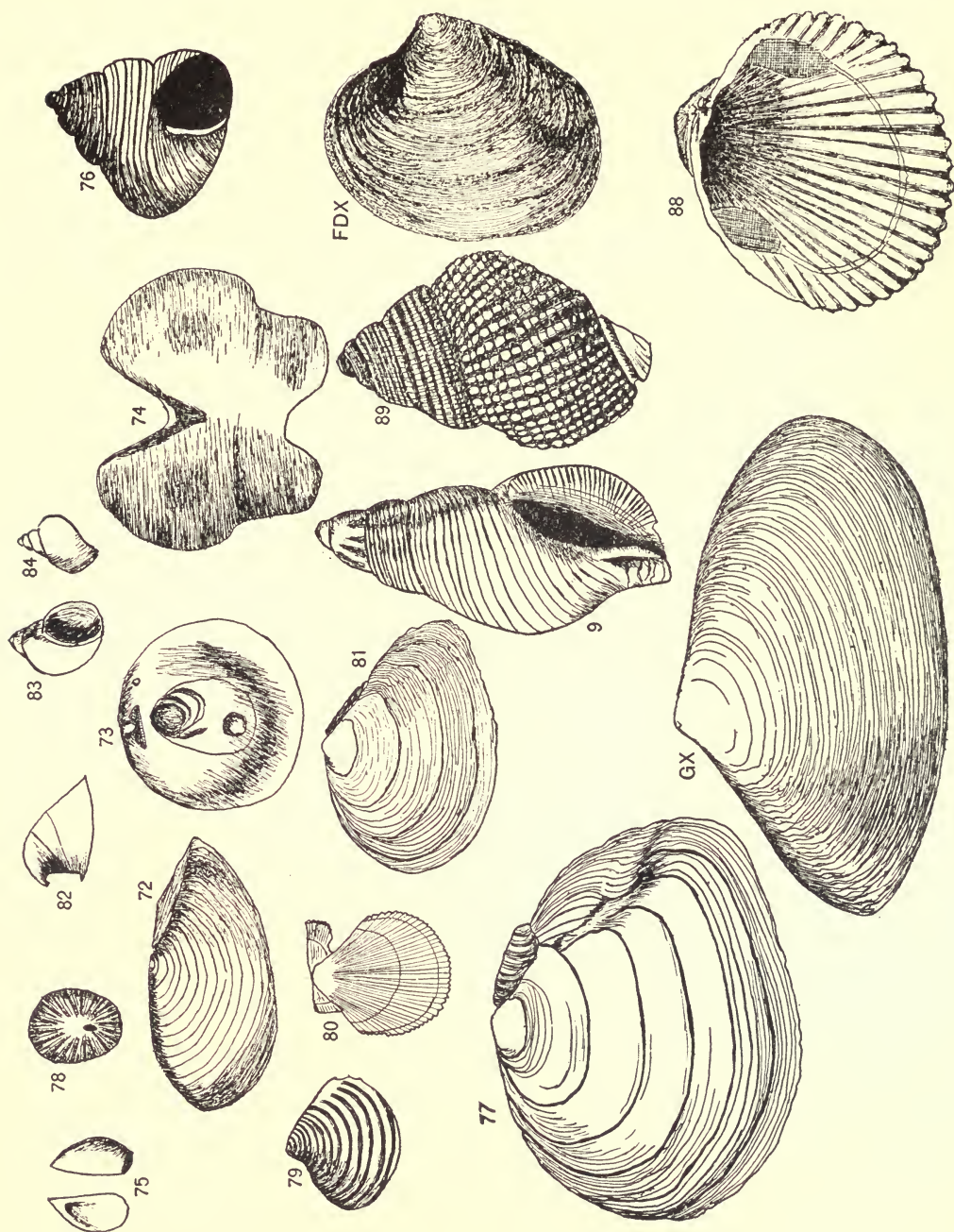
"A long time afterwards he came back, dressed in the dry wolf hide, and went to the house of the wolves and danced and sang before them, thus clad. And they dared not touch him, because of the wolf-skin dress he wore."

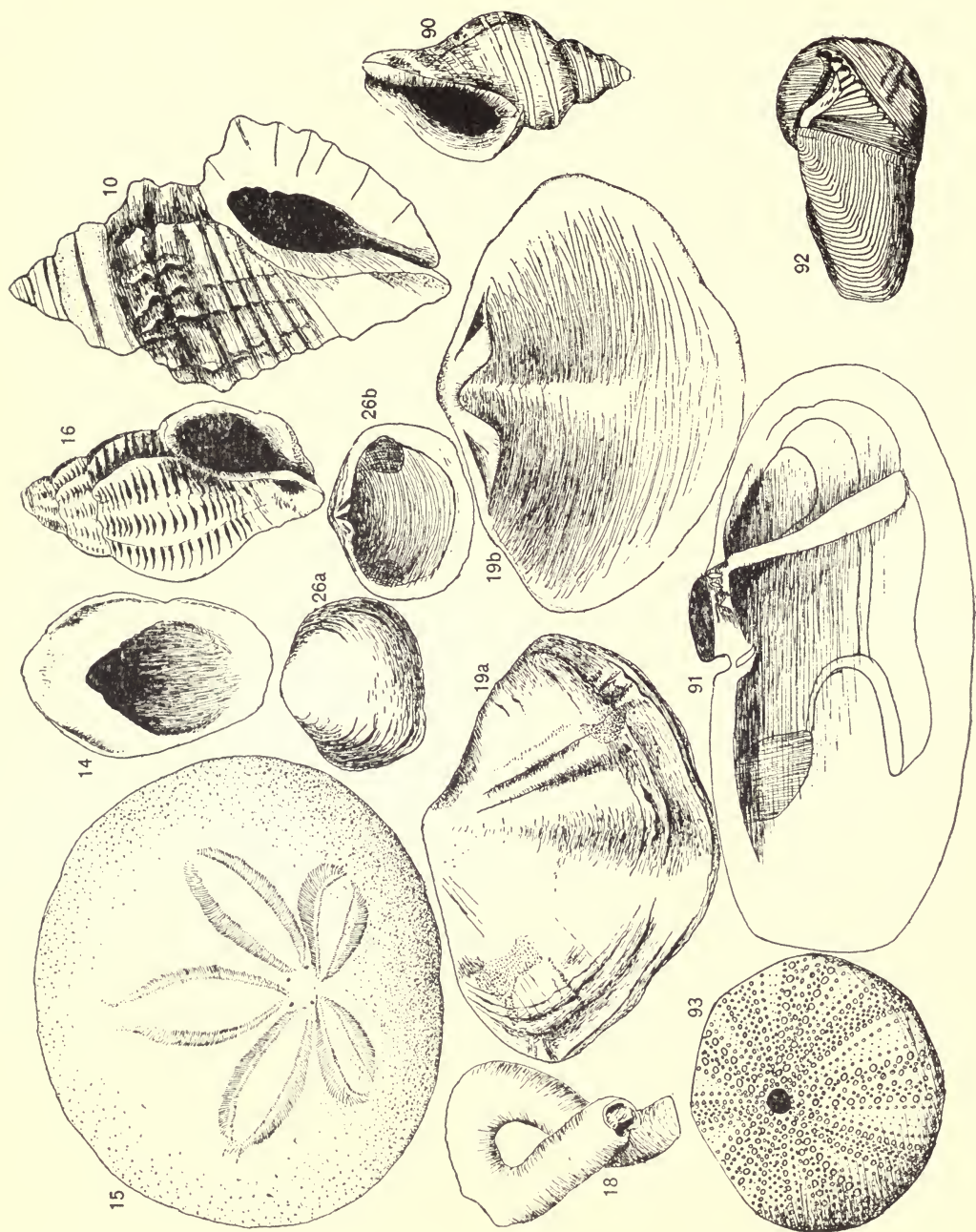
List of fish, animal and plant remains found in the middens at LaPush, Washington, and vicinity with drawings of similar living sea-shell species of the same locality, given on plates numbered 1-4, as indicated. (The drawings were made for the writer by Frank Fremont Bennet and Gordon Benjamin Hobucket, Indian pupils of the Quillayute Day School, LaPush, Washington.)

1. *Echinarachinus excentricus*. Sea Biscuit. Plate 4, fig. 15.
2. *Strongylocentrotus drobachensis*. Sea Egg; Sea Urchin. Plate 4, fig. 93.
3. *Terebratella transversa* Sowerby. Plate 4, figs. 19a and 19b.
4. *Panope generosa* (Gould). Plate 2, fig. 87.
5. *Pecten hericeus* Gould. Plate 3, fig. 80.
6. *Hinnites giganteus* Gray. Plate 2, figs. 59a, b, c.
7. *Placunanomia macroschisma* Deshayes. Plate 3, fig. 73.
8. *Mytilus californicus* Conrad. Plate 1, figs. 13a, b.
9. *Pholadidea ovoidea* Gould. Plate 1, figs. 5a, b.
10. *Astarte compacta*. Plate 3, fig. 79.
11. *Cardium nuttallii* Mart. Plate 2, fig. 34.
12. *Cardium*, species.
13. *Paphia staminea* (Conrad). Plate 1, figs. 8a, b.
14. *Tellina bodegensis* Hinds. Plate 3, fig. GX.
15. *Macoma inquinata* Deshayes. Common Clam. Plate 1, figs. 24a, b.
16. *Macoma nasuta* Conrad. Plate 3, fig. 81.
17. *Macoma*, species. Plate 3, fig. 77.
18. *Siliqua patula* Dixon. Razor Clam. Plate 4, fig. 91.
19. *Schizothærus nuttallii* Conrad. Horse Clam. Plate 2, fig. 85.
20. *Cryptochiton stelleri* Middleton. Giant Chiton. Plate 3, fig. 74.
21. *Acmæa pelta* Eschscholtz. Plate 1, fig. 28.
22. *Glyphis aspera* Eschscholtz. Plate 1, fig. 6.









23. *Calliostoma costatum* Martyn. Plate 3, fig. 76.
24. *Margarita pupilla* Gould. Plate 2, fig. 40.
25. *Tegula funebre* (A. Adams). Plate 1, fig. 25.
26. *Littorina fossata* Gould. Plate 3, fig. 89.
27. *Littorina scutulata* Gould. Plate 3, fig. 84.
28. *Littorina sitkana* Phillips. Plate 3, fig. 83.
29. *Scalaria indianorum* Carpenter. Plate 2, fig. 69.
30. *Scalaria*, species. Plate 2, fig. 37.
31. *Parapholus californicus* Conrad. Plate 4, fig. 92.
32. *Hipponyx*, species. Plate 1, fig. 3.
33. *Crepidula adunca* Sowerby. Plate 4, fig. 14.
34. *Crepidula adunca* Sowerby. Plate 3, fig. 82.
35. *Polynices lewisii* (Gould). Plate 2, fig. 86.
36. *Puncturella cuculata* Gould. Plate 3, fig. 78.
37. *Nassa mendica* Gould. Plate 2, fig. 41.
38. *Euthria dira* Reeve. Plate 3, fig. 9.
39. *Murex foliatum* Gmelin. Plate 1, fig. 63.
40. *Ocenebra lurida* Middleton. Plate 4, fig. 16.
41. *Acila lyalli*.
42. *Thais lapillus* (Linnæus). Plate 2, fig. 71.
43. *Thais crispata* (Chemnitz). Plate 1, fig. F9; plate 4, figs. 10 and 90.
44. *Thais saxicola* (Valenciennes).
45. *Thais saxicola*, var.
46. *Amphissa corrugata* Reeve. Plate 1, fig. 58.
47. *Olivella biplicata* Sowerby. Plate 1, fig. 27.
48. *Saxidomus squalidus*. Plate 3, fig. FDX.
49. *Amycla gausapata* Gould. Plate 2, fig. 43.
50. *Yoldia limitula* Say. Plate 3, fig. 72.
51. Tube of worm. Plate 4, fig. 18.

In addition to the above list, the following are also to be found in the middens:

Bones of hair seal (*Phoca vitulina*), fur seal, sea otter, porpoise, sea lion, and bones of the following species of whale: sperm whale, black fish, fin-back, sulphur bottom, California gray, and killer whale; also bones of the following fishes: Halibut, bastard cod, codfish, squid?, (*Octopus tuberculatus*)?, skates, dogfish (*Acanthias suckleyi*), sharks,

trout (*Salmo*, species), *Anarrhichthys*, species, spring salmon (*Oncorhynchus tshawytscha*), sockeye salmon (*O. nerka*), silver salmon (*O. kisutch*), dog salmon (*O. keta*), humpback salmon (*O. gorbuscha*), and steelhead trout (*Salmo gairdneri*).

Bones of animals identified: Elk, big horn, mountain goat,² black bear, *Putorius*, species?, black-tailed deer, wild cat, beaver, raccoon and otter.

Plant remains found in the middens (found in fragments only): Gigantic kelp (*Fucus gigantea*), salmon berry (*Rubus spectabilis* Pursh), raspberry (*Rubus leucodermis* Dougl.)?, *Vaccinum*, species, Kammas (*Scilla fraseri*), *Acer circinatum* (half charred), *Sambucus racemosa* Linn., red cedar—wood fragments (*Thuja plicata*), salal (*Gaultheria shallon* Gr.), equisetum tubers (found only in very thinly pressed-out fragments), fern roots, roots of several kinds of sea-weeds, roots of the eel-grass, thumb berry (*Rubus odoratus*), elder *Arctostophylus uva-ursi*.

The principal remains of birds found were those of ducks and geese, that is, of the edible water fowl in general.

THE HOH REGION.

The Hoh Indian village is situated at the mouth of the Hoh River, 14 miles down the coast southeast of LaPush (Washington). It is now occupied by only a few Indians, but in the long ago it was one of the most populous villages on the coast. Furthermore, since discovered, it has had a checkered career.

The site of the Hoh village is an ancient midden heap. Other midden heaps are to be found at all convenient landing places along the coast for many miles. An ancient midden heap is also to be found on the Hoh River some 16 miles inland at a place called the "bench," on a benched area where the Olympic glacier made a stand on its retreat up the mountains from the coast. That some of these midden piles are very ancient is evidenced by the fact that huge forests are growing over them. At Hoh a giant cedar of the age of

²The latter two are found usually only in the ladle form of the horns.

not less than 1,000 years stands atop one of the principal midden ridges.

These middens are similar to those described at LaPush and contain similar material. It is also the writer's opinion that they were made by the ancestors of the people who now occupy the region, the Hohs and their kin-folk, the Quillayutes.

THE OZETTE-MAKAH REGION.

The Makah (Klas-set or Kwe-net-sat'h) Indians, a branch of the Nootka family, occupy the Cape Flattery region. When first visited by white men, they claimed all the country from Flattery Rocks and the Ozette Indian village on the Pacific front around Cape Flattery and Tatoosh Island to the mouth of the Hoko River on the Strait of Juan de Fuca, the distance down the coast each way from the cape being about 18 miles. By the Makah treaty of 1855, known as the Treaty of Neah Bay, which was effected by Governor Isaac I. Stevens, Superintendent of Indian Affairs and Governor of Washington Territory, this territory was reduced to a distance about six miles down the coast on each side of the cape. Tatoosh Island was also thrown out of the Indian lands. The portion reserved includes a low flat area and meadow land partly covered with a dense forest and partly open marsh at the south extending from Neah Bay to the Pacific, a distance of about four miles. This low area is bordered by abrupt and almost precipitous hills on each side throughout its entire length. It is conclusively evident that at a not remote period the waters of the Pacific joined those of Neah Bay, leaving that portion of the cape north of the marsh-area an island. This conclusion is supported by the tradition of the Indians that the ocean once flowed through this low area between the Strait of Fuca and the ocean. Even now, the waters of Waatch River at every high tide, flow within a few rods of the waters of Neah Bay. The whole region is of mountainous character and is the termination of the Olympic Range. It is covered with an almost impenetrable forest, which is composed of spruce and hemlock and a dense undergrowth of rose bushes, wild cur-

rants, raspberry, salmon berry, thimble berry, salal, elder, alder, and crabapple. The only open spots are at Flattery rocks, along the Waatch River and at Tsuess on the Pacific south of the mouth of the Waatch and the cleared area at the Indian village of Neah Bay on the Strait of Fuca.

In the region originally claimed by the Makahs the ocean is shut out in most places by a high precipitous rock wall. At a few places, however, the sea meets a friendly beach. On these beaches and in the open spots above mentioned, the aborigines had their homes. In fact, every available landing and open space has had its little settlement at some time or other, and to-day each has its midden remains, oven mounds, and burial piles. The most extensive remains are at the Indian village of Neah Bay, at Ozette, at the mouth of Ozette River, two miles further north up the coast, in the Tsuess region, at Waatch, near the mouth of the river of the same name, at "Warm House," on Tatoosh Island, at Baada Point, and Neah.

The archaeological remains indicate four stages, which the writer will designate as recent, old, very old, and ancient. They also seem to show that the region has been occupied by at least three different peoples.

The Recent. The middens of this age date from the coming of the white man and show his implements and Hudson Bay beads intermingled with the ocean shells and Indian curios. They continue in age to the present time. The largest midden heaps of this age are at Neah Bay proper. In the main they compose a shell ridge which runs in a semi-circle through the present village. It is of considerable width and I should judge that it is three feet in thickness. Its principal constituents are sea shells; a few of the Pacific oysters are found in these remains.

The Old remains are scattered throughout the region and often underlay the recent, to which they are very similar. They differ, however, in a lack of white man's things and in a greater abundance of Pacific oyster shells. These remains, as with the recent, contain many stone implements, such as hammers, chisels, knives, daggers, etc. They also contain stone effigies, totems and other household ornaments and curios, all distinctly Makah in make. This seems to show

that the region was occupied by the Makahs while these middens were being formed. The middens are often quite thick and indicate a considerable age in accumulating.

The burial mounds and oven mounds of this period are similar in appearance to those described at LaPush. The effects interred in the former or occasionally lost when making the latter, show the Makah design.

It might be well here to add a note on the burial customs of the Makahs when first discovered.

When first visited by white men, when a Makah died his body was immediately rolled up in his wearing apparel and best robes and firmly bound with cords, then doubled up in the smallest possible compass, a hole was then dug near the house of the deceased, with sticks and shells, deep enough to admit the body, leaving the top level with the surface; sometimes for distinguished personages, such as chiefs and persons of chieftain stock, the corpse was encased in a frame of boards—puncheon slabs—and covered over with the same material. A portion of the property of the deceased was then placed on the corpse or on top of the burial case, in case one was used. A puncheon-board stockade-like enclosure was then usually placed around the grave, so as completely to enclose it, the ends of the perpendicularly set puncheon planks rising above the ground about four feet. A little earth was then thrown on top of the grave and the whole space in the enclosure filled up with stones. This was the general mode of burial, though the corpses of slaves and of the very old were disposed of with as little trouble as possible.

There are also stockade-enclosure mounds of this period. These are banks on which the stockades were erected, or they are the refuse piles which collected just outside the stockade fence, the latter likely being the most plausible origin of this class of ridge mounds.

The Very Old archæological remains underlie the previously described remains and are distinguishable from them by the lack of stone implements, effigies, totems and other stone curios. They resemble the older remains at LaPush and were likely made by the Quillayutes at the time when they occupied the whole of the Olympic peninsula west and

north of the mountains. These remains, which are mostly middens, show no intermixture with the Indians to the north who used stone implements and who made their household gods, effigies, and totems out of stone. The Quillayutes were not a stone-implement making people; hence the conclusion that they made the very old midden remains in this section.³

The Ancient archæological remains are middens, burial mounds, and oven mounds very similar to those above described. They differ, however, from the last in that stone implements are plentiful. These seem to indicate an invasion of the region from the north, the invaders being later driven out by the Quillayutes; or probably they were the first people in the region and they were dispossessed by the latter.

³The Quillayutes have a tradition that they once lorded it over the whole peninsula from Port Townsend on the Strait of Fuca to Hoh on the Pacific coast. Moreover, both the Makahs and the Quillayutes each have a tradition that they originated where they are now; that is, the Makahs were created at the cape and the Quillayutes at LaPush. The legend concerning their creation is that, first, animals were produced, and from the union of some of these with a star which fell from heaven came the first men, and from them sprang all the race of Makahs, Cloquets and Nittinats of the Makah group, and the Quillayutes, Hohs and Chemakums of the Quillayute family. The tradition, which is common both at Quillayute and Neah Bay, also goes on to say that Indians were created on Vancouver Island also at the same time. It is a curious thing about this myth that both the Makahs and Quillayutes tell it, yet neither includes the other in it.

Another tradition which is common to the two tribes and which accounts for the scattering of each tribe from its parent home, as the tradition goes, is the flood myth.

This myth, according to the Quillayutes, is that a long time ago the great thunder-bird became enraged and caused the waters of the great deep to rise and cover even the very tops of the mountains with water. When the sea began to rise the Quillayutes took to their boats. The sea was four days in rising and four in receding. The people in their boats sailed as the wind and water currents took them, as there was neither sun nor land to guide them. When the waters receded, they were much scattered. One segregation found themselves at Hoh, another at Chemakum (Port Townsend), and a third succeeded in returning to their own home.

Concerning the same myth the Makahs say: A long time ago the water of the Pacific flowed through what is now the swamp and prairie between Waatch village and Neah Bay, making an island of Cape Flattery. The water suddenly receded, leaving Neah Bay perfectly dry. For four days the water ebbed out. Then, without any waves or breakers, it rose till it had submerged the whole country, excepting the tops of the mountains at Cloquet. The water was warm as it came up to the houses. As it rose the Indians took to their canoes and floated off with the current, which set very strongly to the north, but as there were no landmarks and as the sky was continually clouded, some drifted one way and some another. When the waters subsided to their accustomed level, some of the Makahs found themselves at Nootka, where their descendants now reside. Some found homes at other places to the north. Many canoes came down in trees and were destroyed and numerous lives were lost. The waters were four days regaining their accustomed level.

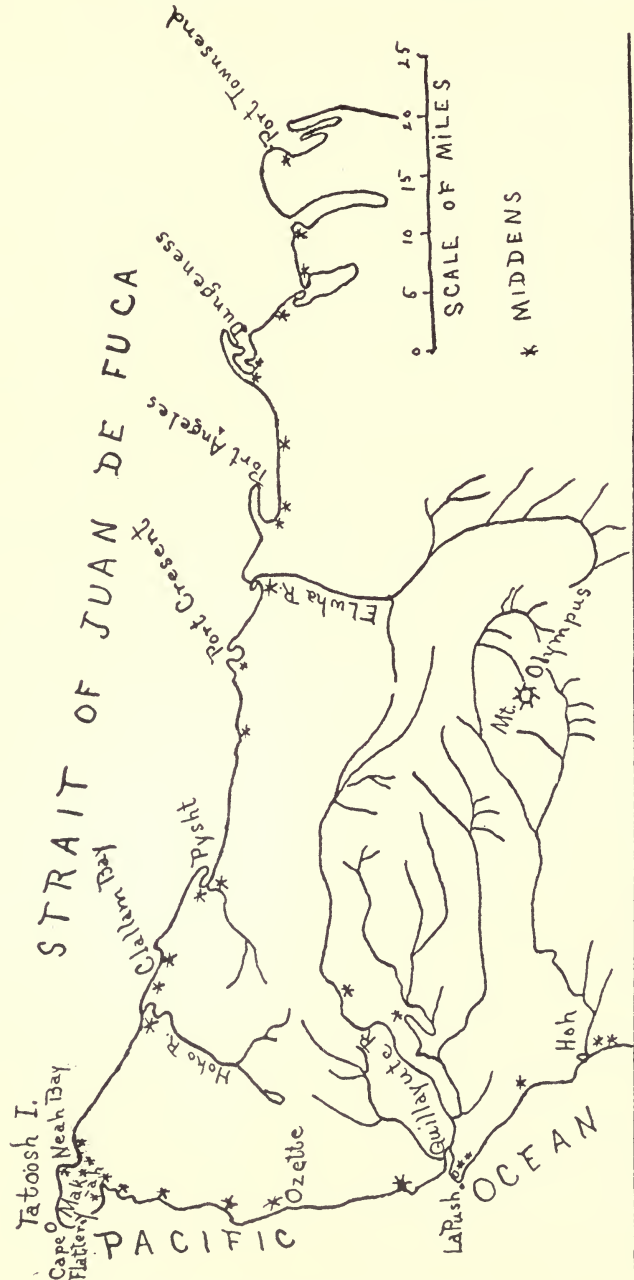
The Waatch prairie shows conclusively that the water of the Pacific once flowed through it; and on cutting through the turf at any place between Neah Bay and Waatch the whole stratum is found to be fine beach sand, intermingled with ocean shells, sometimes collected in piles and ridges as if they had been ancient midden heaps. In some places the turf is not more than a foot thick; at others, the alluvial deposit is two or three feet. As this portion of the country shows conclusive evidence of volcanic action and earthquake disturbances on a gigantic scale, there is every reason to believe that there was a gradual depression and subsequent upheaval of the earth's crust, which made the waters rise and recede, as the Indians allege.

THE STRAIT OF FUCA AND SOUND REGION.

When the Strait of Fuca was first visited by white men, the Clallams occupied its south shore from Port Discovery to the mouth of the Hoko River just south and east of Neah Bay. Their villages occupied all of the good landing places throughout the entire region. These were named in the Point No Point treaty of January 26, 1855, as follows: Kah-tai, Squah-qaihtl, Tch-queen, Ste-tehtlum, Tsohku, Yennis, Elh-wa, Pishtst, Hunnit, Klat-la-wash and Oke-ho. Also in talking of their villages to the writer the Clallam head men named them at the time of the discovery without any reference to any written record and also located each as follows: Skwa-quelth, on Discovery bay; Suche-queen, now called Squim; T'Stal-lum, home of the chief Chits-mah-han or the Duke of York, on the shore between Squim and Dungeness; T'Say-is-cot, at the present Dungeness; Ee-ins, just east of Port Angeles; Cha-wheets-un, at Port Angeles; Port Crescent; Elk-wha, at the mouth of the Elwha River near Port Angeles; Pysht, at a town still bearing that name; Ka-need, Clallam Bay; Kla-kla-wise, between Clallam Bay and Hoko River; Hoko, at the mouth of that river.

Also, when first visited, the Chemakum tribe held the country about Port Townsend and the Skokomish, Twana and other tribes occupied villages in the "sound" region and about the head of Hood's Canal.

The above building sites and similar landing places on the adjacent islands have been the homes of the kaleidoscopic moving aborigines for many generations. They seem to have been the battle ground of races. The midden heaps and other archæological remains also show that several different peoples have occupied each place in the revolving years. These archæological remains correspond somewhat to those described in the Ozette-Neah Bay region. Also the middens which correspond to the Very Old middens of that section seem to be very similar and further indicate that the Quillayutes dominated the country here at that time. The Old archæological remains seem also to indicate that the Clallams had not occupied the region so long as the Makahs have the cape country. Middens on Whidby Island also seem to



The Olympic Peninsula, Washington

show that the Clallams migrated from there to the mainland. The Clallam traditions that they came from the north bear out this conclusion.

Besides the above archæological remains, great quantities of human bones are washed up on the Port Townsend spit by the coming and receding tides. The great number of bones washed up precludes the possibility of the spit having been a former graveyard site. Furthermore, the way the bones have been promiscuously piled, seems to indicate a massacre.⁴

⁴The writer inquired both of the Clallams and the Quillayutes about this washing up of human bones on this spit and each had a story about it, both relating it to the same incident.

The Clallams state that before they had moved to the mainland, and while they were yet on Whidby Island, their braves, by a surprise, fell upon the Quillayute-Chemakum Indians at a time of a Devil's dance on the spit and massacred the whole population attending the ceremony, but the victim to be sacrificed, a woman, whom they saved and who afterwards became the wife of their chief. This defeat of the Quillayute-Chemakums gave the Clallams a lodgment on the mainland, which they still maintain.

In reference to this same incident, the Quillayutes give the following tradition:

"In the long ago we had a bad medicine woman among us. Everywhere she went a pestilence broke out and the people would die by hundreds. She went from here to Hoh and from there to Chemakum (Port Townsend). It was the same there as at Hoh and here. Soon there was disease and death there. The dead people were buried. At the close of the funeral rites, the shamans rose as one man and denounced this witch. A great assembly of the tribe was called to meet at the village of Chemakum. The bad "tomanawis" woman was dragged before the council. A unanimous vote decreed her to be burned as a black "tomanawis" witch, as an evil-spirit doctor. Immediately she was fettered and tied to a tree. Then all slunk from her to make the final preparations for the tragic act. All day following this trial everyone was busy. Some of the women went to the clam beds and gathered clams. Others went far into the woods and gathered berries. Others prepared soups and other eatables and collected whale meat, oil and dried fish for the great occasion. Some of the men dragged the canoes of every sort to the place of destruction. Others collected all the robes and all the household goods at hand and piled them in a great heap. Other men went to the woods and dragged to the place of meeting a huge pile of wood. Then as the sun began to go down toward his western home all again slunk into the dense woods and all became silent as the dead, all but the moaning of the poor, helpless woman, who knew that for her the last sun had set.

"It was in the full moon time. Near the tenth hour, as you palefaces now reckon time, an owl hooted in the thicket adjacent to the death enclosure. A wolf yelp answered. Quickly following these signals, the cleared space around the witch woman was filled with shouting, hallooing, shrieking people. The devil dance was on. Near the victim, where the intense heat would scorch her, they kindled an immense fire. Then around it and the helpless woman they danced in circular order from right to left. Vigorously they stamped from the first. Louder and louder grew the hideous chant. More and more frenzied the actors became. The sacrifice was great. They had to kill the witch and at the same time appease the wrath of the gods for their having let her live so long and also to obliterate her evil influence. The highest pitch of frenzy was reached. With a terrifying, hideous, horrible howl, the whole scene instantly changed. Each dancer lunged forward from his position in the dancing circle and seized whatever Indian property he could seize from the collection that lay in heaps along the outer circle of the cleared dancing space, be it canoe, robes, or what-not. This he proceeded to destroy, making the most possible noise by voice and by any other means he could devise, as he did so. The air was full of flying debris. The horrifying din was sickening. Again the scene changed. Two half-grown bears were thrown into the midst of the maniac-acting throng. Instantly they were seized by the teeth of the human demon-actors and literally torn to pieces. Then to a man the diabolically acting performers rushed forward upon the helpless woman and tore her to pieces with their teeth likewise, as she called upon the gods of the woods, the Mother Earth, the thunder-bird and the mountains to avenge her death. And they came.

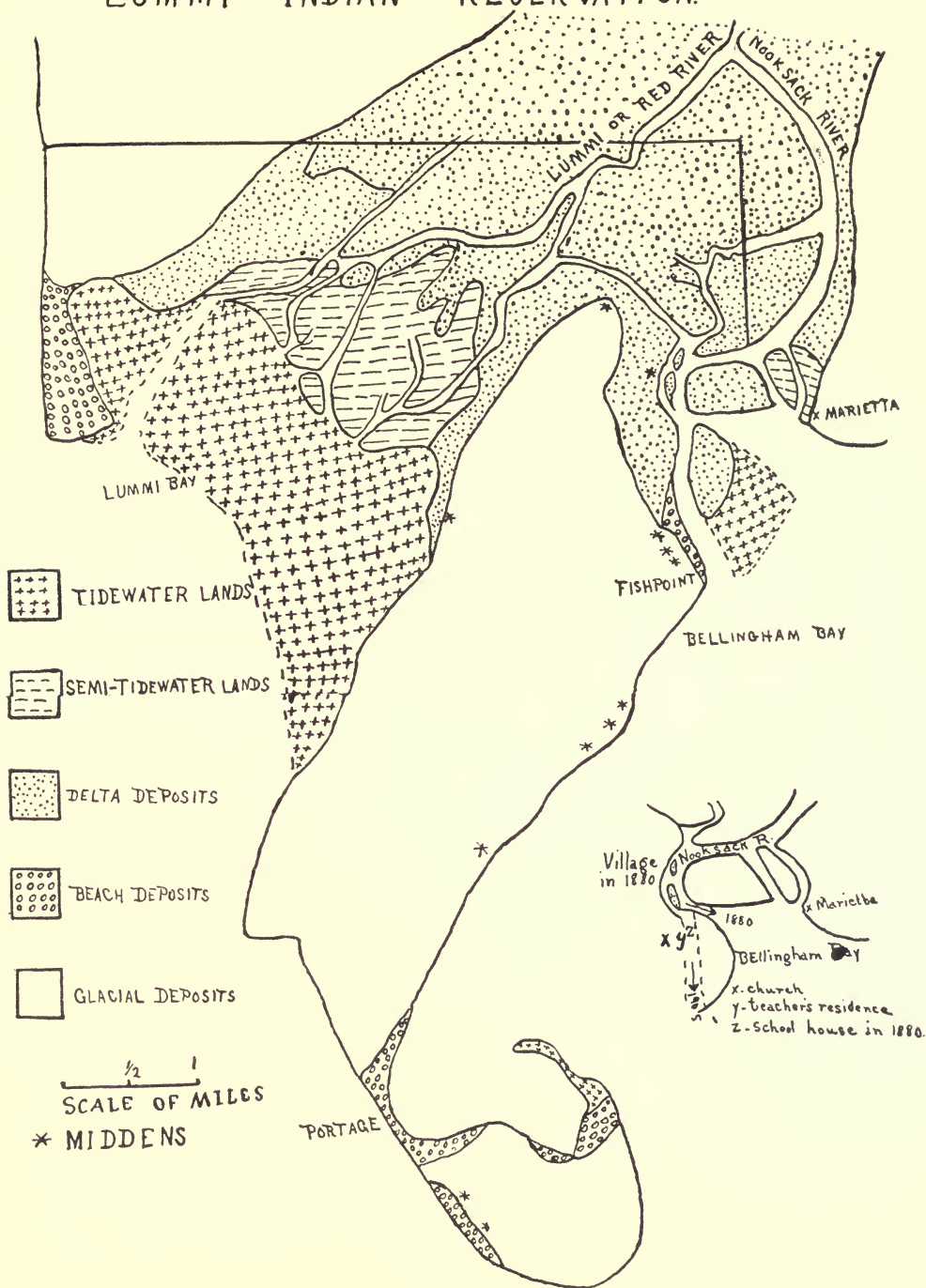
"While they had been dancing, a storm arose and the thunder-bird at this juncture began to flap his wings and open and shut his eyes in the heavens, as the lightning snake sallied forth beneath that warring bird's breast. The woods suddenly, also, became alive with demons. Shouts and shrieks came from every quarter. Onward with a blood-curdling yell came the evil spirits. Before them there was no mercy. All of the assembled Quillayute-Chemakum tribe then and there perished, and the demons (the Clallam Indians) held the land."

THE LUMMI-NOOKSACK COUNTRY.

This region extends from the Sumas Mountains in Western Washington westward to Georgian Bay and from the southern point of the Lummi Peninsula northward to the International Boundary Line. For the most part, its practically low, level surface consists of estuary and glacial deposits, some trap and granite rock and a small patch of Eocene, exposed at Bellingham. The whole region was once heavily timbered, but now it is almost half cleared and the other part might be termed "logged-off lands."

The archæological remains found here are middens and mounds. The middens are of two classes, ancient and recent. As will be seen by examining the map of the Lummi Reservation, a portion of it is marked "glacial deposits." This was an island until in recent times. The delta deposits of the Nooksack and Red or Lummi rivers were filled in by said rivers against this island till it is now mainland. These deposits are more than 30 feet thick, as is shown by the finding of logs at a depth of 30 feet at several places in the delta area. While this delta was still covered with ocean water, the Indians lived at several places on the glacial island adjacent to this now filled-in delta area. These Indians were fishing Indians, the same as the aborigines who now occupy the region. They lived on the water front as they were a canoe-using people and consequently would not have their villages far from water. These people were clam-eating Indians and clam and mussel shells constituted the principal middens marking their village sites. One midden heap occurs about one and one-half miles northwest of Fish Point, another on the west side of the peninsula, on the west side of the island, about due west of the last-named midden heap. Another occupies about the north point of the island. These middens are covered over with from a foot to three feet of sand and loam, and over them were growing trees that must have been 500 years old. This would make the middens quite ancient, if the rate of delta depositing was as slow formerly as now, probably 1,500 years old. Similar middens were found about a mile south of Fish Point, also on the southwestern point of the penin-

LUMMI INDIAN RESERVATION.



sula and at another point on the east coast line about half-way between the "Portage" and Fish Point.

A group of middens was also observed on the north shore contact-line of the glacial deposit-area north of Hale's Pass, but these were not covered with earth and had the appearance of having been made within the last 150 years.

As will be seen by examining the map, the village site in 1880 was mostly destroyed by encroachments of the Nooksack River, but the islands (practically the only remaining part of the village) showed three occupations, but none so old as the middens described above. There is a series of shells covered by about two feet of earth. On top of these is another series of middens, probably a foot in thickness. These are characteristic because the top layer contains Hudson Bay trade beads. The surface middens are those of the village abandoned in 1880.

More ancient midden heaps were found farther inland in the middle Nooksack valley and at the foot of the Sumas mountains and on eastward to the vicinity of Sumas Lake in Canadian territory. Some of these midden remains are very extensive. They are now many miles inland and must have been thrown from the Indian kitchens when Georgian Bay had its eastern shore line at the very foot of the Sumas mountains. Judging from the appearance of the country and the geological data one can gather concerning this region, these middens must be 2,000 years old.

The mounds divide themselves into two groups, burial mounds and oven mounds.

The mounds which are regarded as burial mounds are usually of large size, varying from three to 20 feet in diameter.

The oven mounds are scattered throughout the region and northward to the Fraser River country. These are of three types: pit mounds, stone enclosed mounds, and sand and clay mounds.

The pit mounds, on examination, showed that a pit had been dug in the ground and that a fire had been built in it so that a bed of an inch or more of charcoal formed the bottom layer of the pit. The stone enclosed mounds had the stone enclosure inside the mounds, where the outer dirt

had not been removed by the wind or water. From all appearances the enclosure of stone in rectangular form was laid out on the ground, and a fire kindled in the enclosure, as a layer of charcoal formed a stratum within the rock enclosure. The sand and clay mounds also showed a charcoal stratum in each.

These mounds were usually large, from three to 16 feet in diameter. They were so numerous that they attracted my attention and I went to excavating them. I was of the opinion at first that they were burial mounds, though I knew that the present Indians of the region did not bury their dead in that manner when first met by the white man. My examination, however, caused me to form the conclusion that they were oven mounds.

I found clam shells, a few only, in some of the mounds. Furthermore, on further investigation and observation, I even found the Indians of the region baking clams in just such mounds. I also found an Indian and his wife baking kammas (*Scilla fraseri*) bulbs in a sand mound. I have since even helped eat kammas after it was baked this way. These finds led me to inquire into the method of preparing food by the oven process by the Indians now occupying the region and the regions adjacent.

I found that in the old times, on big feast occasions, the women would go out and collect great quantities of clams and other shell-fish. These they would take to the feasting place. A pit was usually dug to hold the clams and dug in size in proportion to the clams secured. A large pile of wood was heaped over the pit and ignited and when it had burned down to the charcoal state thick wet rushes, or wet boughs, were placed hurriedly over the heated mass and the clams poured in a heap over this. More wet rushes or boughs were placed over this and a foot or more of earth was placed over the entire heap, thus making a large mound.

Often, instead of a pit to hold the clams, a layer of stone was placed on the ground and occasionally not even that was used. Kammas was prepared in the same manner as the clams, except that just before the last dirt was put on the mound quite a quantity of water was poured on the kammas to make it steam. The mounds, after being closed

over with earth, were left to let the cooking process proceed for 12 to 24 hours. Then the earth was removed from the top of the mound and the prepared food taken out. A mound with a pit in the top would mark the site of this bake. The winds would soon fill this pit and a round mound would be the result.

In cooking for a single family, of course, a smaller mound would be used. For big feasts a whole wagon-load of kammas, or clams, would be baked at a time. The cooking of the kammas and clams by this process accounts for the inland mounds. No doubt, the Indians who occupied the region in the long ago prepared food in the same manner as does the present aborigine.

ARCHÆOLOGICAL MATERIAL IN ADJACENT BRITISH TERRITORY.

The section here under consideration extends from the International Boundary Line and the shores of Georgian Bay northward to the Fraser region. The archæological remains of this district are middens, burial mounds and oven mounds.

The oven mounds are numerous and are very similar to those described in the Lummi-Nooksack region.

Burial mounds are abundant in the Fraser delta, along the shores of Georgian Bay and in the southern half of Vancouver Island. In the groups on the Fraser they are composed of clay, sand and boulders. They, however, are often very dissimilar. Some are simple mounds of clay, which had been heaped over the corpse. The mounds of this type are often from two to three feet in height and range in diameter from three to 30 feet. Undoubtedly they were the graves of children. The chalky remains were all that I could find in any of these mounds. Another class of mounds of the region is also composed of clay, but differing from the latter in having a pile of boulders heaped up over the clay cone. In some cases these boulders were covered with neighboring soil, some of these grave tumuli now being 10 feet high. An examination showed that at times the corpse was laid on undisturbed earth, at others a hole was first excavated in the soil and the body placed in

the bottom of this. A layer of charcoal was found in the bottom of some of these graves, evidently the remains of a sepulchral fire; probably only the personal belongings of the deceased were burned there. On Vancouver Island there is evidence in the tumuli that cremation was practiced by the early tribes there.

Another class of mounds occurs frequently throughout the region of the Fraser, on Vancouver Island, at Point Roberts (in the Sound region), and on the mountain slopes overlooking Sumas Lake. These are rectangular in shape and have a rectangular periphery of stones. Some are approximately true squares in shape, others decidedly oblong. These enclosures vary from 10 to 20 feet in side and end dimensions. Some also have as high as three rectangular rows of stones, one inside the other, with an interval of a few feet between them. The outer row is also often doubled and capped by an additional row. A pile of boulders also often fills the center space; and over this, clay and different colored sands are spread. Sometimes the clays and sands seem to be interstratified. The material is all usually locally obtained, though the clays and sands of the colored, stratified type seem to have often been obtained from quite a distance. The rocks of the periphery are often very large, weighing from 200 to 500 pounds, the stones of some of the larger mounds collectively weighing probably 30 tons; some of the mounds on Vancouver Island are made up wholly of a conically piled rock heap. The general conclusion is that this class of burial mounds was not made by the present race of Indians in the region, for up to the coming of the white man they never practiced burial by inhumation; their burial was usually in or under trees. From the burial practice of other Indians mentioned in this article, it would seem that a race of aborigines related to the Makahs must have made the mounds. But there is not sufficient data at hand more than to make a suggestion on the subject. It is evident, however, that the builders of these mounds were an old race and their tombs of great age, dating back probably more than 2,000 years and antedating the coming of the Salish stock, probably many hundreds of years.

The middens of the region are also of interest and many show great age. Many have old forests growing on them that must exceed 500 years in growth-rings of the larger trees. One of these is a very large midden on the right bank of the north arm of the Fraser, a few miles up from its present mouth. Also extensive midden remains stretch along an abandoned bank of the river for a distance of one-fourth mile some 400 yards back from the present river. In extensiveness and volume these middens average in depth from five to 15 feet and cover over five acres in area. They are mostly decaying clam shells, intermingled with enormous quantities of ashes, heat-fractured stones, a few implements, and other refuse material. This entire midden heap shows unmistakable evidence of extreme age and was undoubtedly formed more than 1,000 years ago by the predecessors of the present Salish tribes.

Besides the above midden heaps, I found kitchen material at Hammond on the Fraser and at many other places inland. Also, while doing geological research work in the region, I was surprised to find extensive midden heaps in the thick underbrush and timber miles from any water, as in the vicinity of Boundary Bay and Point Roberts. These were all of the old type and evidently had been made when the waters of Georgian Bay extended farther inland. Considering the slow recession of this bay in a geological way, and also considering the age of the forests now growing on these middens, they must have been the kitchen refuse of Indians who lived in the region not less than 2,000 years ago.

Besides the inland middens, the shores of the estuaries, bays and islands, and, in fact, continuous to and throughout the Puget Sound region, are literally covered with midden material. Often they stretch almost continuously for miles. These are more recent and are easily distinguished from the older middens above.

In conclusion, with reference to the middens, the ancient middens are mostly inland, that is, away from the present shore line. The shells of these heaps are in a state of decay and are intermingled with immense quantities of ashes, calcined and broken stones. They are also of considerable thickness, exceeding 20 feet in some instances. They also

contain large numbers of barbed and grooved bone spear and arrow points and other bone implements and but few of stone. They were made when the shore line was farther inland than now and are now all overgrown with an ancient forest. The later middens are usually along the present shore line, are comparatively shallow and are not so rich in relics as the older and more extensive heaps. The shells composing these heaps are usually in a good state of preservation. Also, the relics obtained from them are usually of stone. These are: Dull green, gray and mottled jade-like rock and smoky quartz adzes, chisels and axes, dark gray and black basaltic rock and slate stemmed and differentially beveled spear and arrow heads, obsidian knives, stone swords, bone needles, stone pestle hammers, stone bowls and basins in great number and variety.

As a concluding remark, it would seem that at least two distinct races have inhabited the region. The midden material left by the first race is most extensive and in the main is made on the old shore line when the ocean waters extended much farther inland than now and, judging from the ancient forest ground and the geological criteria at hand, it must have been in the neighborhood of 2,000 years since this race disappeared from the region. The second series of archæological material dates from the receding of the ocean waters from the beach on which the ancient middens were formed and continues in being deposited to the present time.



FIG. 1—A grave at LaPush.



FIG. 2—James Island, the former home of the Quillayute Indians, known by the Indian name Akah-lot. The Indians lived here in a stockade village when first visited by the whites.

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